



The

The GARzette

The Official Newsletter of the Gwinnett Amateur Radio Society

November 2022 <http://www.gars.org/> Volume 32, Issue 11

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www.GARS.org

TechFest

GARS January Exhibition of the
Technical aspects of Amateur Radio
Held at the Gwinnett County
Fairgrounds

**Don't forget to support our
advertisers at the back of the
GARzette.**

GARS Meeting: Radio Astronomy for Hams by Tom Crowley KT4XN
Tuesday November 8, 2022 at 7:00 PM

President's Message

From the President...



Where has the year gone!? I don't know about you, but my year has been filled with so much adventure. I was county hunting earlier this year and finished up my Tennessee counties. So now, I have found a Geocache in every TN county. I know this comment is not Amateur Radio related, but not everything in our lives is about RF. Having a sense of adventure and the desire to learn something new or see something new has always been a way to make time scoot on by at a rapid pace. It sometimes too interferes with some of our obligations.

One such thing was this article. I got a little caught up with the nice weather, yard work and just enjoying the outdoors, that I put off writing this piece for you all. So, if it seems a bit off, sketchy or otherwise scattered, my apologies. I have so many things to think, plan and ponder, it's like the old ad edge, shooting fish in a barrel. Okay, back to ground control.

As you read this, you may already be at the Stone Mountain Ham Fest in Lawrenceville. Or, maybe you have put in some volunteer hours setting up chairs, hanging signs or setting up booths. Or maybe you have been at the workplace earning a living and supporting your family. Whatever you are doing, I hope you can now enjoy the weekend.

Speaking of the weekend, you can always run by the Hamfest in Lawrenceville to see or maybe find that something you have been wanting for a long time. A well-deserved early Christmas present to yourself, loved one or good friend?? If you are not in the market for a new rig or other toys, maybe come by and volunteer some of your time and help out. I know the organizers are still needing folks to help control parking, show vendors where to set up, etc. Early sales and registration reports indicate a huge turnout.

Come and see what is happening at the Gwinnett County Fairgrounds Stone Mountain Ham fest.

Fall HamCram class was conducted on the weekend of October 29th. The HamCram leadership team reported this medium sized group of folks wishing to become Amateur Radio Operators had a 100% pass rate. Congratulations to the new Technician Class Hams! A big thanks to the instructors: Jamie (KX4HA), Ralph (KJ4CNC) and John (WB4QDX) for producing an extraordinary new class of hams. Of course, we wouldn't have this new class of new hams without the extraordinary VE Test Team led by Dave (W4DTR). This team also uses a new electronic testing system, where the tests are taken using tablet/pc device making administering, grading and sending exam results to the W5YI group a more efficient process and returning newly issued licenses to the new hams. Thanks VE Team!!

The GARS Holiday party planning is coming along nicely. We have a caterer lined up and contracted to deliver the food. We'll just need helpers to set up decorations beforehand and clean up a little afterwards. **Please keep in mind**, you do not need to partake in the food to come. We would love to have the whole GARS Family partake in the fun. Door prizes and the GARS Ham of the Year announcement as well. But if you wish to join us to eat, please sign up online so that we may have a good head count to inform the caterer. See the left navigation menu on gars.org to order your meal.

A lot is happening now and coming up. Stay tuned to GARS for all the happenings. I hope to see (saw) you at the Hamfest.

73,

Joe Biddle, AD4PZ

Club President





GARS Repeaters and Other Communications

| | | |
|--|---|---|
| <u>2 Meter Repeaters</u> 147.075(+) MHz Tone 82.5 147.255(+) MHz Tone 107.2 | <u>6 Meter Repeater</u> 53.110 (-1 MHz) No Tone (Offline for Maintenance) Other Resources: <u>APRS</u> 144.390 -- 1200 Baud W4GR | 6M Currently down 147.075 Operational in Snellville 147.255 Operational in Snellville 224.580 Operational in Grayson 442.100 Operational at Goshen Springs 442.325 Operational in Buford 444.525 Operational in Snellville Link remote receivers being added |
| <u>1.25 Meter Repeater</u> 224.580(-) MHz Tone 100.0, 1.6 MHz Offset | <u>D-STAR</u> WD4STR 145.060 + (1.4 MHz) 440.550 + (5 MHz) | |
| <u>70 Cm Repeaters</u> 444.525(+) MHz Tone 82.5 442.100(+) MHz Tone 100 442.325(+) MHz Tone 100 | | |

Notable Web Links

Ham Radio Glossary: <https://noji.com/hamradio/glossary.php> a very comprehensive listing provided by Noji Ratzlaff KNØJI. On his site there is also a lot of information about getting started in ham radio.

Need Help – Let GARS Elmers answer your questions

Send an email to elmers@gars.org with the subject listing the area (like Antennas, Repeaters, Digital, DMR etc.) of your query to get to GARS Elmer volunteers.

The *GARzette* is the official monthly newsletter of the Gwinnett Amateur Radio Society, serving its members and other persons interested in the advancement of the Amateur Radio art.

Original articles, art, and photos are invited and encouraged. Previously copyrighted submissions cannot be accepted for reprinting unless permission from the appropriate publisher is provided in writing along with the information being submitted. If reprints are from publications allowing their unrestricted use, please include a copy of the printed permission contained in the publication.

If possible, bring your articles to the monthly meeting in Microsoft Word or rich text (.rtf) or text or HTML format or by e-mail to editor@gars.org. Artwork can be accepted in most any graphics format and can be submitted via e-mail to the same address. Alternate means of submittal can be arranged when necessary.

In keeping with the Amateur Radio spirit, permission is hereby granted for the reproduction of The *GARzette* articles by other Amateur Radio club newsletters provided that proper credit is given to the individual author and *The GARzette*.

The GARzette is published each month with the assistance of Karen KI4HPP and Kyle W4KDA who print copies for distribution at meetings, etc. and Dave Bruse, W4DTR, who distributes the newsletter electronically.

Deadline for submissions is the 28th of each month for inclusion in the following month's issue.

For additional information view our Website at: <http://www.gars.org> [PS— Articles to publish in the *GARzette*, either written by GARS members or published elsewhere, are always welcome. —Ed.]

Newsletter Email: editor@gars.org Editor: Bob Hoffmann, K4CQO

GARS HELP WANTED

Multimedia Chair - We are looking for a volunteer who can video record our meeting presentations then edit and post these videos to the GARS YouTube channel. Kyle Albritton, W4KDA, will be available to train this volunteer. If you could perform this function, please contact any officer via the Officers and committee chairmen page to inquire about this position. <https://gars.org/contact/>



GARS Meetings & Workshops

GARS Meetings and Workshops are held in-person at the EAA 690 Hangar, 690 Airport Rd, Lawrenceville, GA 30046.

Meetings and Workshops are OPEN to all, feel free to share your invite with others.

Zoom login info will be posted to <http://www.gars.org> prior to the meeting.

When events are available on Zoom

- Workshops and Meetings will be **recorded**. By participating you consent to being **recorded**.
- Please change your display name to Your **FirstName Call Sign**, e.g. **Hiram W1AW**
- [**How to change Your Display Name in Zoom**](#)
- Please stay muted until ready to speak. Your space bar works like a PTT for un-muting
- To be fair to everyone, there will be a three minute limit for each person during Q & A
- You may ask questions in chat; **please stay on topic while using chat**.

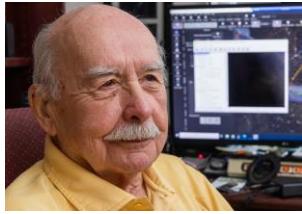
GARS Meetings Schedule (second Tuesday @ 7:00 PM): (these are the presentations)

- November 8, 2022 - Radio Astronomy for Hams - Tom Crowley KT4XN
- December - GARS Holiday Party
- January 10, 2023 - Ham Bands Below 160m - Kevin Scott K4GTR
- February 14, 2023 - Pi-Star DMR Hot Spot - Mark Prichard KN2TOD
- March 14, 2023 – Ribbit, a new digital texting mode for VHF/UHF – Pierre Deliou W4CKX

Workshop Schedule (third Tuesday @ 7:00 PM): (these are the Hand-on Workshops)

- November 15, 2022 - Radio Astronomy for Hams – Tom Crowley KT4XN
- December - GARS Holiday Party
- January 17, 2023 - Ham Bands Below 160m - Kevin Scott K4GTR
- February 21, 2023 - PiStar DMR Hot Spot - Mark Prichard KN2TOD
- March 21, 2023 – Ribbit, a new digital texting mode for VHF/UHF – Pierre Deliou W4CKX

GARS Meeting – November 8, 2022 Radio Astronomy for Hams



Tom Crowley, KT4XN, is an amateur optical astronomer and radio astronomer. He volunteers at Georgia Tech conducting public tours of their telescopes as well as K-12 events. Because of his engineering (and ham radio) experience, Georgia Tech

sends him to Hawaii from time to time to support their telescopes there. The AJC published a nice article about him today.

<https://www.ajc.com/inspire/georgia-techs-aloha-telescope-brings-thrilling-images-to-k-12-classrooms/QCVO4IVQVFA5DII52M44DZXIS4/>

GARS Workshop – November 15, 2022 Radio Astronomy for Hams

For the Workshop we will go over Radio Astronomy things that can be done from your own back yard or maybe a POTA/SOTA activation.

This will be an in-person Workshop at the EAA 690 Hangar.

GARS Holiday Party December 3 at the EAA Hangar. Sign-up at www.gars.org on the left-hand column. The GARS Holiday party will be held on Saturday, December 3rd starting at 6:00 PM. Volunteers are needed to help with pre-party decorations, food serving and clean up. Geri Foust, K4GMF is leading this effort. Please contact any club officer to say you will help us out in some small way.



GARS Happenings

20 Years ago in the November 2002 GARzette:

- Several Middle Schools were helped with their ham radio programs by GARS
- GARS members helped with the National Kidney Foundation Walk that was held in Atlanta
- There is a picture of Danny Glover in this GARzette

You can always browse the GARzette archive at <http://www.gars.org/newsletters> and go directly to the 2002 GARZette by clicking on the image. 73, Bob, K4CQO, GARzette Editor



Health and Wellbeing – Sandy Jackson, KJ4DRO

Look for this resource on [Email](https://gars.org/contact/) (<https://gars.org/contact/>) and use it as a means to convey information about a GARS family member or Silent Key notification.

Net Managers Corner

Monday Night 2 Meter “Want, Swap, Sell, and Information Net”

GARS NEEDS MEMBERS TO SERVE AS NET CONTROL STATIONS!

GARS is a great Amateur Radio service club with the membership and awards to prove it. Our club is very busy and active, and we use the Monday night net to get timely information out to our members. Weekly participation is needed to make our net function well. There is only a small group of very dedicated people who make the net happen each week, and we need more members to volunteer to serve as Net Control Stations (NCS) on a rotating basis.

Out of almost 300 members, there are only seven operators who serve as the NCS for the GARS net every Monday night. In no particular order, they are:

Don – KW4AL
Glen – W3WWT

Ray – N4GYN
Russell – AB4QQ

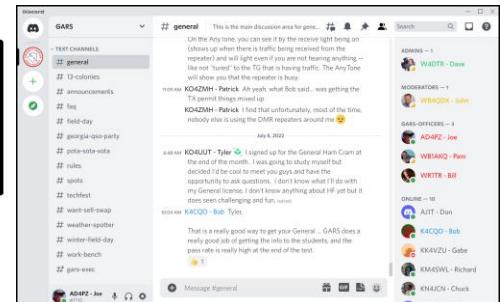
Bill – WG9NUW
Chuck – KK4TKJ

David – KA4KKF
Charlie – WS4TOT

As GARS Net Manager (Chuck KK4TKJ), I would like to have more volunteers to fill NCS positions. I do plan and post the schedule months in advance. Any conditions will be accommodated that you as a rotating NCS need to place on the scheduling of your duties. If your plans change, I can make adjustments for the schedule to work, and I will make those changes happen as soon as I am notified of a problem. As Net Manager, I also send out reminders each week to let the NCS scheduled know he or she is NCS for the next Monday night net. In short, serving as a rotating NCS is a small duty but a great contribution to the club. The “Want, Swap, Sell Information Net” begins promptly at 19:30 every Monday night and runs about 30 minutes. As a scheduled NCS, you will request the assistance of a volunteer alternate NCS each time you have Net Control. Your simple duties will be to tune in to the GARS repeater, read the script, take a few notes and forward the information to me for record keeping.

Please lend a hand and contact (Chuck) via [Email](https://gars.org/contact/) (<https://gars.org/contact/>) to help support the effort that makes GARS the great club that it is. See you on the Nets!

Don't forget about our Discord utility for GARS announcements, news, activity spotting and more. See <http://www.gars.org> top of the home page. This is a sample of Discord. →





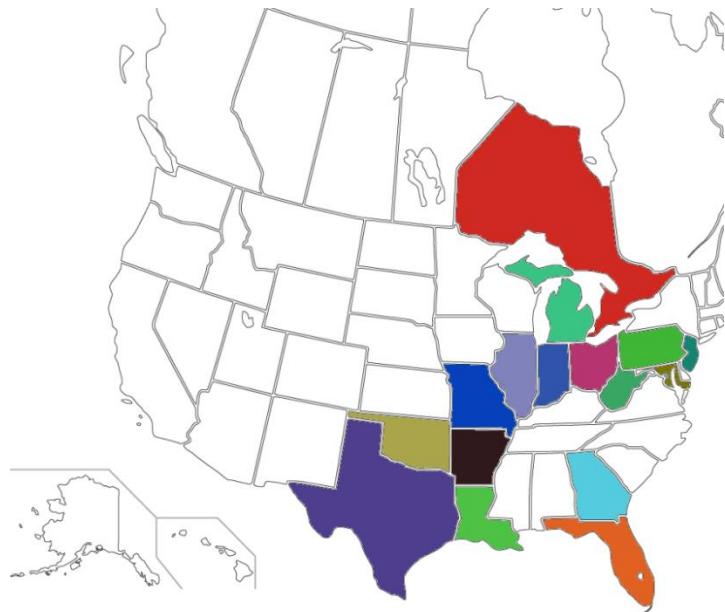
School Club Roundup

GREAT ARRL SCHOOL CLUB ROUNDUP AT MCCONNELL MIDDLE SCHOOL

Arrl's School Club Roundup was held the week of October 17th. And our radio club at McConnell Middle School turned in a great performance. Our club this year has many 6th graders with a couple of returning "old timers" (7th graders). Throughout the week we were calling CQ or pouncing with most of our success occurring between 14.250 and 14.280 (ARRL recommendation). This year we totaled 1785 points, which is almost double our last year's score. We contacted 15 states and 1 Canadian province, including six other schools who were working the contest. Three DX contacts were made. (Bosnia-Herzegovina, Wales, and Guadeloupe)

The map shows all the states we contacted, but I wanted to show it for another reason. I believe it perfectly shows what happens when you combine the "launch angle" of a 20M dipole, and atmospheric "skip." No close-in contacts were made. Any Georgia contacts made were on 2M.

I want to thank the few GARS members that made contact during the week. Much of our club's success is due to GARS support.



GARS Fall HamCram

GARS had its Fall HamCram on 10/29 & 10/30. We had a great exam session. Thanks to Ralph KJ4CNC, John WB4QDX and Jamie KX4HA for teaching this HamCram class.

==> 10 new Technicians

Special thanks to the Volunteer Examiners who made this special exam session possible:

W4DTR -- Dave
 WB1AKQ -- Pam
 KX4HA -- Jamie
 WB4QDX -- John
 AF4FG -- Earl
 KK4TKJ -- Chuck
 KM4SWL -- Richard
 N4XYY -- Rick
 WB4WTN -- Bill
 KV4SP -- Frank
 K4CQO -- Bob





Getting More from FT8

Do you Have Blinders On?

Bob Hensey, K4VBM

A lot of people operate FT8 digital mode. In spite of the negatives, it does quite well during poor propagation and band conditions. Unfortunately, a lot of FT8 operators are not getting the best out of their radio, because “They have *blinders* on”! I believe this to be a widespread problem. What do I mean by that? Well let me explain.

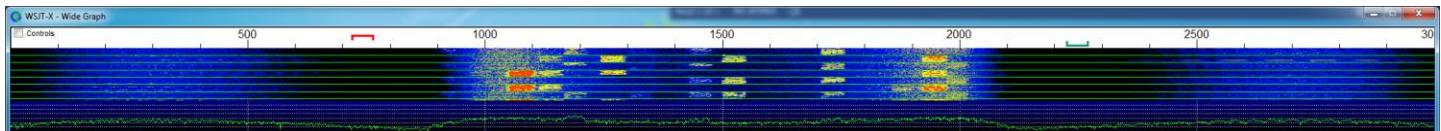
Most radios have a 3 Kilohertz passband capability. The **passband** is the range of frequencies or wavelengths that can pass through a filter. The passband is basically the spectrum coming into your radio from your antenna that you can actually hear when you are tuned to a particular frequency. Now, many times it is a good idea to limit the passband based upon what you are doing with your radio. For example, for CW, you might only want the passband to be 500 Hertz or even 100 Hertz to mute other CW signals that would interfere with you hearing the one you want to QSO with. Most radios have multiple different filters that allow you to limit the passband of your radio for these very reasons.

Now, in the case of FT8, the passband from your radio is being sent to your computing device as audio, and the WSJT-X program decodes the entire passband that it receives, and displays the decoded messages as well as the signals themselves in its waterfall window. You might notice that you can stretch the WSJT-X waterfall window out as wide as 3000 Hz. Well, that's because most radios can pass that much, so it made sense to the WSJT-X authors to decode that much. That's why you are able to see signal traces from 0 through 3000 in that waterfall window.

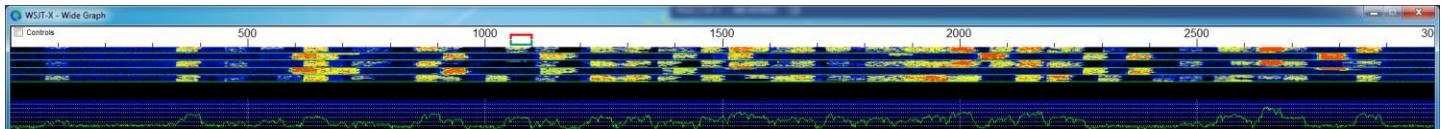
I say are able, because in my experience many FT8 ops have their radio's passband configured improperly for FT8 mode, and they don't hear the entire 3 kHz of spectrum, but instead only a fraction of it on either side of their red transmit cursor. How can that be? Well it's because many radios come from the factory with a filter setting that reduces the 3 kHz passband to something much less. I am constantly saying out loud to myself that “There's another ham who has his FT8 blenders on!”

I know this because I transmit a lot from the edges of the passband where there is less QRM, and I call people who have these blenders on and they are “deaf” to my signal, until I move my TX signal closer to or on top of theirs whereupon magically they hear me! I see this many times a day, so I decided to write this article make people aware of this “blenders’ phenomenon and learn how to correct it.

To illustrate what this looks like, I set a filter on my radio to allow the frequencies between 1000 and 2000 in the passband to pass through, but filter 0-1000 and 2000-3000. This is what you see on the WSJT-X waterfall:



You will NEVER decode/see a signal to the left of 1000 or the right of 2000, even though they are there! So, do you see something like this when you operate FT8? If you do, you are really missing out! It is because your radio has a narrowing filter in action. Every radio is different, and you will need to read your radio's manual to find out what its passband is, and what the default width the default filter is set to. And after you set the passband filter to its maximum width, you will then see something like this:



So much better, and you will make so many more QSOs if you have your radio's filter set properly when you operate FT8 digital mode.

I will also pass on from experience that both the Icom IC-7100 and Yaesu FT-891 radios have a default filter width less than 3000. When I helped a friend set a proper width for Filter 1 on his IC-7100, he was amazed at what he had been missing. The same for the friend with the FT-891.

So, read your radio's manual and make sure you don't have "blinders" on when you are operating FT8. 73 all, and good DX!

Bob Hensey – K4VBM (Very Bad Memory)

Upcoming Georgia Statewide POTA

Mark the Date! On the weekend of April 1-2, 2023, there will be state-wide POTA activations of all 50 Georgia State Parks! Right.

The idea is to enlist enough hams from all over to fan out across the state and activate 50 parks over the course of that one weekend. You've probably seen other states activating all of their parks on one weekend, and now Georgia will be doing the same. Details are still being worked out, but there will be a process for individuals, clubs, and ARES groups to sign up for particular parks, with the possibility that several parks will see multiple activators. In addition to regular POTA credits, there will also be recognition for contacts and activations during the event, including Georgia park-to-park contacts. And because POTA activations are good training for ARES deployments, there will even be a little "friendly competition" among ARES groups. This should be a ton of fun.



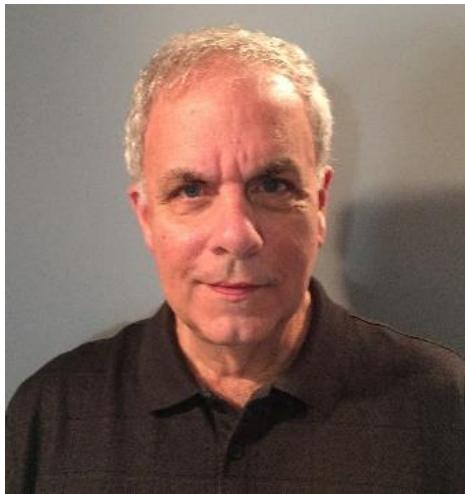
We will have a website where details, signups, etc., will be posted. In the meantime, keep an eye on the event description and comments on the "Georgia Ham Radio Portable" Facebook page:

[Georgia State Parks on the Air.](#)

Tips & Tricks for Vintage Radios

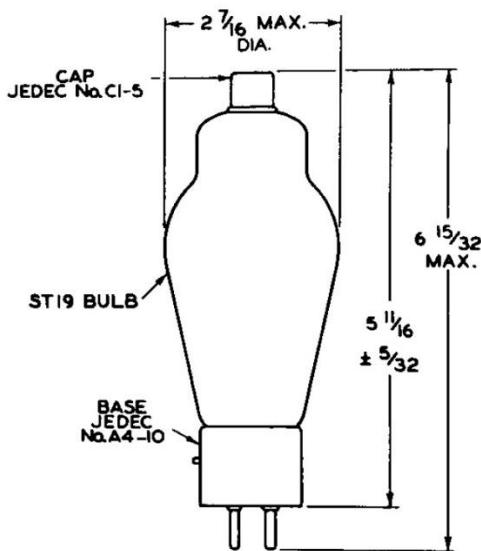
Vintage Amateur Radio

de Bill Shadid, W9MXQ



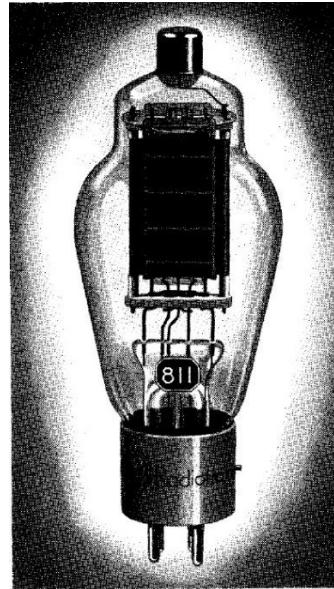
In the late 1930's, Radio Corporation of America (RCA) announced a new RF Triode called the 811. That tube lives on today. We now know it as the 811A. This installment of Vintage Amateur Radio will discuss the 811, the 811A, and modern amplifiers using this vintage tube. This will be the first of three articles on this very popular tube. Products using the 811 or 811A were in ham radio products beginning in the early 1940's (first in WWII military equipment) and right into modern linear amplifiers available on the market, today. The original 811 and its successors over the years carry a reputation not unlike the other popular transmitting tubes over the years' such as the 6L6, 807, 1625, 2E26, and 6146 – just to name a few. While all these tubes are reasonably well known, the 811, and its 811A successor, have shown a much longer product life cycle with them being the only ones of this group still used in new equipment, today.

Pat Volkmann, W9JI, a good friend, fellow vintage radio collector, and fellow radio historian/restorer advises that he found the RCA 811 in a 1938 RCA Transmitting Tube Catalog. Assuming for the moment that was its time of introduction, that means it is now in its 81st year of production. A good run – and still going forward.



811 Line Drawing (1963)

RCA Technical Sheets



811 Sketch (1941)

Internet Photo



811A Photo (2019)

The major difference in ham radio use of the 811 and the 811A tubes relates to Plate Dissipation. In Intermittent Commercial and Amateur Service (ICAS) these tubes are rated at 50 and 65 watts, respectively – indicating a 30% increase in power capability for the 811A over the 811. Both are rated at a nominal 1,500 volts of Plate Voltage but technical sheets show examples of 1,250 and 1,750 volts, nominal on the plates. Examples of amplifiers in this series of articles will show the use of two, three, and four of these tubes used together. Good operation, within technical limits for dissipation and



distortion products would see these tubes used in products providing linear amplifiers with outputs of 110 watts per tube with the 811 and 160 watts per tube with the 811A. A fine example of a good quality, properly rated 811A Linear Amplifier would be the four 811A tube equipped Collins 30L-1.¹ The 30L-1 has a rated output of 500 to 600 watts. That is well within the bounds of good operation of the 811A at 150 watts per tube SSB and CW RF output. Some modern amplifiers exceed these specifications – but at the penalty of shorter tube life and somewhat increased distortion.

While it is well known that the 811 and 811A could handle full specifications to 30 MHz, it may be less well known that both tubes can attain these ratings to 60 MHz. These tubes are good to 80 MHz at 80% of specifications and can hold to 60% of specifications at 100 MHz.

A relatively unknown trait of both the 811 and the 811A is their fast heating filaments. The filaments could heat so fast that they could illuminate, heat up, and reach full operation in about three seconds. This made it possible to have the filaments off in a portable or mobile installation when in receive. Activating transmit with a microphone button (PTT switch for example) would also turn on the tube filaments. This would greatly reduce current consumption while just listening.²

In current times here are four amplifiers that use these tubes. Two of them are current, one has been off the market for a short while, and the last one several years but is of modern design. Three of them are, or were, made in the United States and one was manufactured in the United Kingdom. All four are from manufacturers still active in the ham radio business. We will start with two well-known amplifiers from Ameritron:



Ameritron AL-811 Linear Amplifier³

Front and Interior Views
Interior view has front to the right



Ameritron AL-811H Linear Amplifier³

Front and Interior Views
Interior view has front to the right

The self-contained Ameritron amplifiers are of good design with the AL-811H being one of the most popular amplifiers on sale to amateur radio operators in the current time⁴.

The AL-811 has three 811A tubes while the AL-811H has a complement of four 811A tubes in its



amplifier. The interesting part of this amplifier is that the only difference in the two is the vacuum tube area of the chassis. All power components, control circuitry, meters, etc., are the same. The front panels are slightly different in that one says "AL-811" and one says "AL-811H."

Ameritron rates these amplifiers rather aggressively. Check these specifications:

Ameritron AL-811 Linear Amplifier with 3x 811A Tubes

| Mode | Power Output |
|------|------------------------|
| SSB | 600 Watts ⁵ |
| CW | 600 Watts ⁵ |
| RTTY | 400 Watts ⁶ |

Ameritron AL-811H Linear Amplifier with 4x 811A Tubes

| Mode | Power Output |
|------|------------------------|
| SSB | 800 Watts ⁵ |
| CW | 800 Watts ⁵ |
| RTTY | 400 Watts ⁶ |

I am referencing the "aggressively" rated by virtue of printed specifications of the tubes which imply that the tubes should be expected to provide 160 watts output, per 811A tube in linear amplifier service on SSB and CW. With three 811A tubes one would expect an output power of perhaps 480 watts and with four tubes one would expect an output power of perhaps 640 watts. For my personal use I would follow those lower numbers using either of these amplifiers. That said, these amplifiers are known for clean and dependable operation so I will remain respectful of Ameritron's specifications.⁷

Both the AL-811 and AL-811A Linear Amplifiers have a tuned input circuit providing a 50-ohm load to the exciter. These amplifiers require 80-100 watts of drive to get full rated power out. They operate from 160 through 10-meters, including the 17 and 12-meter bands (10 and 12-meter operation required an internal modification).

Both the AL-811 and the AL-811H are desktop units, as noted, with exterior dimensions of 8 x 13.75 x 16 inches (HWD) with both units 30 pounds, according to Ameritron literature.

Hinted above but not said, is that the two Ameritron amplifiers are more alike than different. Essentially all components are identical except that the mounting area for the tubes is different. The AL-811 has a three tube sub-chassis while the AL-811H has a four tube sub-chassis (AL-811H). In terms of weight, the AL-811H should be slightly heavier than the AL-811 model. I think the manuals are in error here – but I am not sure which is correct.

The other domestic manufacturer that made a recent vintage 811A Linear Amplifier was Ten-Tec. The product is not currently manufactured but is supported. It was known as the Ten-Tec Model 411 Centaur Linear Amplifier. It used three 811A final amplifier tubes in a circuit that functionally was like the Ameritron AL-811. Power ratings, however, were slightly different. Here is a picture of this attractive, self-contained amplifier:



**Ten-Tec Model 411
Centaur Linear Amplifier**

Specifications for the Centaur were as follows:

Ten-Tec 411 Centaur Linear Amplifier with 3x 811A Tubes

| Mode | Power Output |
|------|----------------------------|
| SSB | 500-600 Watts ⁵ |
| CW | 500-600 Watts ⁵ |
| RTTY | 350-400 Watts ⁶ |

Lower power levels shown are for operation on 160 and 10 meters. The Centaur had a tuned input circuit providing a 50-ohm load to the exciter. These amplifiers required 90-100 watts of drive to get full rated power out. They operated from 160 through 10-meters, including the 17- and 12-meter bands (10- and 12-meter operation required an internal modification). The Centaur is 6 x 15.5 x 13 inches and weighs 40 pounds.

I do not have access to a good quality internal picture of the Centaur but unlike the Ameritron AL-811 and AL-811H Linear Amplifiers, the Ten-Tec horizontally mounts the tubes to get a more-low profile look to the cabinet. This horizontal mounting requires an 811A tube that is specially made for this service. It is worth remembering that only certain 811A tubes in today's market can be mounted horizontally. Improperly supported grid structure in some tubes allows them to sag when warm and then touch the plate structure. That causes a catastrophic internal tube failure. RCA, GE, and Cetron tubes from the USA were made for vertical or horizontal mounting. Svetlana tubes from the Russian Republic were also able to handle mounting in either orientation. However, some Chinese tubes are not constructed for horizontal installation. Be sure you check with the North American distributor on this point before buying replacement tubes.

There is another current vintage 811A amplifier that is rarely seen in North America. Linear Amp UK manufactured a modern 811A Linear Amplifier until very recently.



Linear Amp UK Ranger 811H Front



Linear Amp UK Ranger 811H Interior

The Ranger 811H is similar in specifications to the Ameritron AL-811H but front panel and interior layout is different. The completely self-contained design includes a toroidal power transformer that is just visible under the capacitor and diode board in the interior view of the amplifier. The product, unlike USA products, comes ready to operate on all bands, including the WARC bands, from 160 to 10 meters. (European amplifiers not destined for USA sales do not have to inhibit operation on 10 meters.)

Linear Amp UK Ranger 811H Linear Amplifier with 4x 811A Tubes

| Mode | Power Output |
|------|------------------------|
| SSB | 800 Watts ⁵ |
| CW | 800 Watts ⁵ |
| RTTY | 400 Watts ⁶ |

The Ranger 811H has a tuned input circuit that provides a 50-ohm load to the exciter. This is essential with today's solid-state transmitters. The amplifier is 9.5 x 14 x 16 inches (HWD) and weighs in at about



55 pounds.

If weight is any factor in linear amplifier performance then the Ranger 811H at 55 pounds would seem to possess much more power supply iron and therefore more inherent power capability. However, this could be tied to transformer core material and material used in chassis construction. This is all part of further analysis not complete as this is writing.

In the next installment of this series, we get more into the vintage era with amplifiers many readers will recognize, many may still use, but have not been in production for many years.

I appreciate that you read my articles. Remember that I am open to questions and comments anytime at my email address, W9MXQ@TWC.com.

A special note of thanks to my proofreader, Bob Bailey, W9DYQ. Bob is a bit more than a proofreader as he often adds commentary that makes it into the article.

Credits and Comments:

¹ Subject of a future article.

² I have given the reader a little review of ham radio use of these tubes. Further analysis may be had by reviewing applicable vacuum data sheets as available online.

³ These pictures are from Ameritron literature on the respective amplifiers shown.

⁴ "Best Selling Amplifier" quote is from a video on the manufacturing process for the AL-811A amplifier produced by Ameritron. So, this statement is Ameritron's opinion which may well be based on some market measurement process. I have no reason to doubt Ameritron's claims.

⁵ Typical SSB and CW Operation. (CW at 50% duty cycle.)

⁶ Typical RTTY or Data Operation – at approximately 50% duty cycle.

⁷ In fact, Collins Radio Company in their very popular and great performing 30L-1 Linear Amplifier¹ were held to the lower power levels shown on 811A specifications and netted many years of dependable operation. In fact I have one such 30L-1 amplifier that is over 60 years old and is still running on its four original 811A final amplifier tubes.

W9MXQ



GARS Membership

New Members List in October

William Foster (KQ4DFX)
Alan Gideon (K5AKG)

New Members: 2

**Total Members as of
November 1, 2022
360**

Join GARS members for our weekly
breakfast gathering at
7:30 AM most Saturdays
Now at
Cracker Barrel Restaurant
75 Celebration Dr.
Suwanee, GA 30024

Birthdays in November

John Bachtel (NR4JB) John Kludt (K7SYS)
Benjamin Bogard (KM4DE) George Lieb (K4NSB)
Pamela Brown (KJ4RYV) Al Ludwick (NN4ZZ)
James Burns (KX4HA) Andrea Lynch (KM4OKX)
Julia Collier Donna McCord (KM4FMW)
Drake Cullinan (KN4ZEY) Kathy Mellichamp
Garrison Daniel (KO4FPH) David Morris (KO4RIQ)
Anthony De Lucia (W4OG) Nick Nikley (N0NCQ)
Christi Dickerson Bruce Rhodes (K4ERE)
Matthew Dyals (KN4WBL) Kevin Scott (K4GTR)
Robert Eybers (KN4WBM) Andre Steyn (W7ALS)
Carey Fisher (WB4HXE) Charlotte Stovall
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Eddie Geike (AK4WM) Jim Webb (W4NTA)
Colt Goodrum Nova Whatley (KF4HLG)
Eddie James (WD3D) Karen Whited (AB4NW)
Scott Karlins (KO4NXZ) Danny Kelley (KI4KXO)
Eileen Kelley Jack Kempster (KN4QMB)

GARS MEMBERSHIP

Your current GARS membership status is shown in the monthly newsletter e-mail towards the bottom of the message. To become a GARS member, or to renew your GARS membership, please visit our website – <http://www.gars.org>. To make changes to your GARS membership (moved, new e-mail address, new phone number, etc.), please contact the Membership Chair at Email (<https://gars.org/contact/>) with any changes to your Membership information.

Membership Chair: Karen Albritton, KI4HPP

Committee Members: Dave Bruse, W4DTR

ARRL MEMBERSHIP

To update your ARRL membership information, please visit their website - <http://www.arrl.org>.

MAINTAIN YOUR LICENSE

You can update your Amateur Radio license information with the FCC at their website for free - <https://www.fcc.gov/wireless/universal-licensing-system>. License renewal is subject to the \$35 FCC



fee.

Donating to GARS

Your GARS donation can be used for a certain purpose by donating to one of these funds:

- GARS SK Memorial Fund for Education
- (to remember and honor Silent Keys);
- GARS Scholarship Fund (Administered by the ARRL for awarding scholarships);
- GARS General Fund (any club purpose).

GARS has joined these rewards programs (a portion of every purchase you make through these merchants may be donated to GARS):

- Amazon Smiles;
- Kroger Community Rewards program.

For more information on how to sign up for these rewards programs, or to donate to GARS, visit

<http://gars.org/gars/donations-to-the-club>

GARS on Social Media



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David Adcock, Webmaster, Field Day Chair, TechFest Chair KA4KKF



Ralph Pickwick, Education Chair KJ4CNC



Earl Whatley, Apparel Manager AF4FG



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Kyle Albritton, W4KDA



Bill Cherepy, WB4WTN W4GR Trustee



GARS Meeting Minutes

Gwinnett Amateur Radio Society – MEETING MINUTES 10/11/2022

There were 44 in-person attendees in addition to the online participants.

President Joe Biddle (AD4PZ) opened the meeting at 7:00 p.m. and closed the meeting at approximately 8:30 p.m.

New hams and visitors: Joe (AD4PZ)

- First time visitors recognized.
- New hams and upgrades recognized
- Mic passed for Introductions all around.

Treasurer Report: Pam (WB1AKQ)

Membership: Joe (AD4PZ) reported 362 members

Apparel: Earl (AF4FG) is the new Ralph for apparel.

ARES: Jamie (KX4HA)

- ARES meetings are held the 4th Tuesday of each month at the Gwinnett County EOC on High Hope Rd.
- The annual SET training exercise will be held Saturday Nov 12. It will be a simulated weather event.

VE Team: Pam (WB1AKQ)

- The latest monthly testing session was 100% electronic
- Six tested and all passed. 4 new techs, 1 Extra, and 1 General.

Programs: Kevin (K4GTR)

- November – Radio astronomy Tom (KT4XN) will have an active demonstration.
- December – GARS Holiday Party
- January – Kevin will do what's below 160 meters
- Check the web site for all scheduled programs.

Workshop: Dallas (N4DDN)

- Workshops are generally a mirror of the monthly program.

Techfest: Joe (AD4PXZ)

- Jan 14 at the Gwinnett Fairgrounds.

Other: Joe (AD4PZ)

- The holiday party is in December. Geri Foust is coordinating the party. Help is needed serving. Go to GARS.org for tickets to the party
- Steve (WB2OGY) reminds us that This Saturday Oct 14 is Jamboree on the Air.
- Technician HamCram is the last weekend of the month. Info is on Gars.org site.

Program: GARS show and tell lead by Program Director Kevin (K4GTR).

Minutes prepared by club secretary Bill Hawkins (WR1TR).

Workshop Minutes - October 18th, 2022

Number in Attendance: 14

Workshop Topic: GARS Show-n-Tell

Presenter: Various GARS Members

Brief Summary: Larry AB5NX brought in his very extensive VHF WinLink stations to demo WinLink. Folks asked questions and got help setting up WinLink. The hangar was filled with the sound of data packets being exchanged. Dave W3DJS brought in a Raspberry Pi and answered questions.



Events – GARS and others

| ARRL CONTESTING INFO | | | HAMFEST CALENDAR |
|--|--|--|--|
| <p>From ARRL Contest Calendar</p> <p>> For more information click the links <</p> | | | [Please confirm the status of a Hamfest before making plans to attend] |
| <p>2022 2023 January</p> <p>1 1 Straight Key Night</p> <p>1 7 Kid's Day</p> <p>8-9 7-8 RTTY Roundup</p> <p>15-17 21-23 January VHF Contest</p> <p>February</p> <p>14-18 13-17 School Club Roundup</p> <p>19-20 18-19 International DX – CW</p> <p>March</p> <p>5-6 4-5 DX Contest -- SSB</p> <p>April</p> <p>10 16 Rookie Roundup – Phone</p> <p>May</p> <p>No planned contests</p> <p>June</p> <p>4-5 3-4 International Digital Contest</p> <p>11-13 10-12 June VHF</p> <p>18 17 Kid's Day</p> <p>15-26 24-25 Field Day</p> <p>July</p> <p>9-10 8-9 IARU HF World Championship</p> <p>August</p> <p>6-7 5-6 222 MHz and Up Distance Contest</p> <p>21-22 19-20 10 GHz & Up – Round 1</p> <p>21 20 Rookie Roundup – RTTY</p> <p>September</p> <p>10-12 9-11 September VHF</p> <p>17-18 16-17 EME - 2.3 GHz & Up – Round 2</p> <p>17-18 TBA 10 GHz & Up – Wknd 1</p> <p>October</p> <p>15-16 TBA EME - 50 to 1296 MHz – Wknd 2</p> <p>17-21 16-20 School Club Roundup</p> <p>November</p> <p>5-7 4-6 Nov. Sweepstakes - CW</p> <p>12-13 TBA EME - 50 to 1296 MHz</p> <p>19-21 18-20 Nov. Sweepstakes - Phone</p> <p>December</p> <p>2-4 1-3 160 Meter</p> <p>10-11 9-10 10 Meter</p> <p>18 17 Rookie Roundup-CW</p> | | | |
| <p>For more information: http://www.arrl.org/contest-calendar</p> | | | <p>11/05/2022 - Bahia Shriner's Tailgate</p> <p>Location: Apopka, FL</p> <p>Type: ARRL Hamfest</p> <p>Sponsor: Bahia Shrine Radio Unit</p> <p>11/05/2022 - SERC Hamfest</p> <p>Location: Sarasota , FL</p> <p>Type: ARRL Hamfest</p> <p>Sponsor: Sarasota Emergency Radio Club</p> <p>Website: http://n4ser.org</p> <p>11/05/2022 - 11/06/2022 Stone Mountain Hamfest - ARRL GA Sec. Conv.</p> <p>Location: Lawrenceville, GA</p> <p>Type: ARRL Convention</p> <p>Sponsor: Alford Memorial Radio Club</p> <p>Website: http://stonemountainhamfest.com</p> <p>11/12/2022 - HamJam</p> <p>Location: Alpharetta, GA</p> <p>Type: ARRL Hamfest</p> <p>Sponsor: North Fulton Amateur Radio League</p> <p>Website: http://www.nfarl.org</p> <p>11/12/2022 - Montgomery ARC Hamfest, ARRL Alabama State Convention</p> <p>Location: Montgomery , AL</p> <p>Type: ARRL Convention</p> <p>Sponsor: Montgomery Amateur Radio Club</p> <p>Website: http://w4ap.org/marc/hamfest</p> <p>11/12/2022 - SPARC Fest</p> <p>Location: Pinellas Park, FL</p> <p>Type: ARRL Hamfest</p> <p>Sponsor: St. Petersburg ARC</p> <p>11/19/2022 - Swampfest Open House</p> <p>Location: Fort Walton Beach, FL</p> <p>Type: ARRL Hamfest</p> <p>Sponsor: Family Eye Care & Playground ARC</p> <p>Website: http://w4zbb.org/w4zbborg/index.php?page=Home</p> <p>11/26/2022 - Palm Beach County Ham Radio festival</p> <p>Location: West Palm Beach, FL</p> <p>Type: ARRL Hamfest</p> <p>Sponsor: Palms West Amateur Radio Club</p> <p>Website: http://www.palmswestradio.org</p> <p>12/03/2022 - Silver Springs Radio Club 2022 Hamfest</p> <p>Location: Ocala, FL</p> <p>Type: ARRL Hamfest</p> <p>Sponsor: Silver Springs Radio Club</p> <p>Website: http://k4gso.us</p> <p>12/09/2022 - 12/10/2022</p> <p>Tampa Bay Hamfest - ARRL West Central Florida Section Convention</p> <p>Location: Plant City, FL</p> <p>Type: ARRL Convention</p> <p>Sponsor: Florida Gulf Coast Amateur Radio Council</p> <p>Website: https://fgcarc.org</p> <p>For more information: http://www.arrl.org/hamfests-and-conventions-calendar</p> <p>When searching by division, remember some states adjacent to GA are in different divisions:</p> <p>Southeastern: GA, AL, FL Delta: TN Roanoke: NC, SC</p> |



| GARS Events Calendar for 2022 | | GARS Recurring Calendar |
|---|---|---|
| <p>TechFest Winter Field Day Spring Technician HamCram Dog Show Fundraiser Georgia QSO Party North metro area Fox Hunt Memorial Day Parade ARC/KARC Hamfest Field Day Summer General HamCram JOTA Fall Technician HamCram Maker Faire Stone Mt. Hamfest Holiday Party</p> | <p>Cancelled for 2022 Jan 29-30 2022 March 26-27, 2022 March 30-April 3 2022 April 9-10 2022 April 2022 May 30 2022 June 4 2022 June 26-27 2022 July 30-31 2022 October 16-17 2022 October 29-30 2022 TBD November 5-6 2022 December 3 2022</p> | <ul style="list-style-type: none">2nd Tuesday of the month at 7 pm (except December) Monthly Club Meeting 690 Airport Rd, Lawrenceville, GA 300463rd Tuesday of the month at 7 pm (except December) Monthly Workshop 690 Airport Rd, Lawrenceville, GA 300462nd Sunday of the Month at 2 pm GARS Ham Exam Session 690 Airport Rd Lawrenceville, GA 30046Every Monday at 7:30 pm: GARS Want, Swap, Sell, and Information Net on the GARS 147.075 MHz repeaterEvery Monday at 8:30 pm: ARES Training on the GARS 147.075 MHz repeaterMost Saturdays at 7:30 am GARS Weekly Breakfast Cracker Barrel Restaurant 75 Celebration Dr., Suwanee, GA 30024 |

GARS CALENDAR FOR November 2022

| SUNDAY | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY |
|--|---|--|-----------|----------|--------|---|
| | | 1 7:00 PM GARS Exec Meeting EAA 690 Hangar | 2 | 3 | 4 | 5 7:30 AM Breakfast at Cracker Barrel in Suwanee |
| 6 | 7 7:30 – 8:00 PM GARS 2M Net | 8 7:00 PM GARS Meeting EAA 690 Hangar | 9 | 10 | 11 | 12 7:30 AM Breakfast at Cracker Barrel in Suwanee |
| 13 2:00 PM GARS VE Exam Session EAA 690 Hangar | 14 7:30 – 8:00 PM GARS 2M Net | 15 7:00 PM GARS Workshop Meeting | 16 | 17 | 18 | 19 7:30 AM Breakfast at Cracker Barrel in Suwanee |
| 20 | 21 7:30 – 8:00 PM GARS 2M Net | 22 | 23 | 24 | 25 | 26 7:30 AM Breakfast at Cracker Barrel in Suwanee |
| 27 | 28 7:30 – 8:00 PM GARS 2M Net | 29 | 30 | | | |

Local Ham Radio Exams & Meetings

GARS Ham Radio Exams

Second Sunday of the month

Doors open at 1:45pm, exams start promptly by 2:00pm

GARS VE-Team

VEC: W5YI-VEC

EAA 690 Hangar

690 Airport Rd

Lawrenceville, GA 30046

GARS VE Team Leaders

E-mail: exams@gars.org.

October 2022 Results

We had a great exam session in October. This was a fully electronic exam session.

4 new Technician

1 new Amateur Extra

1 upgraded to General

Special thanks to the Volunteer Examiners who made this special exam session possible:

W4DTR - Dave (CVE)

WB1AKQ - Pam

WB4WTN - Bill

AF4FG - Earl

KM4SWL - Richard

WB2OGY - Steve

NV4Q - Bill

Thanks & 73,

Dave Bruse, W4DTR (CVE)

GARS VE Team Leader

E-mail: exams@gars.org.

Local Ham Radio Exams

In order to find an exam session near you, please visit

http://www.arrl.org/exam_sessions/. Contact the information in the listing for further information.



Local Ham Radio Meetings

In order to find a local Ham Radio Club meeting near you, please visit

<http://www.arrl.org/find-a-club>. Contact the club for meeting information.





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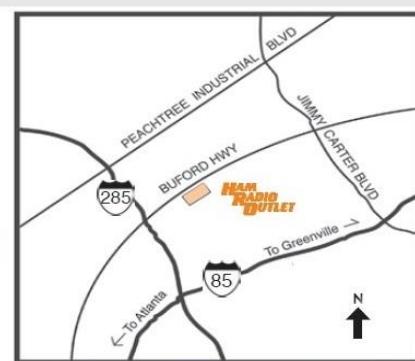


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TechFest

Gwinnett Amateur Radio Society

TECH FEST 2023

★ ★ ★ 25TH ANNIVERSARY ★ ★ ★

SATURDAY, JANUARY 14, 2023

EXHIBITORS: SET UP 7:30AM - 9:00AM

PUBLIC: 9:00AM - 3:00PM

FREE HAM EXAMS: 9:00AM - 11:00AM

FINAL PRIZE DRAWING: 3:00PM

FORUMS - EXHIBITORS

RAFFLE PRIZES - DOOR PRIZES

FREE LUNCH - FREE COFFEE

CHILI COOK-OFF - & MORE!



WWW.TECHFEST.INFO

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